

SEQUENCE LISTING

<110> BANYU PHARMACEUTICAL CO., LTD

<120> Method for predicting a drug transport capability by ABCG2 polymorphisms

<130> P2725PCT-GN

<150> JP 2002-175806

<151> 2002-06-17

<160> 68

<170> PatentIn version 3.1

<210> 1

<211> 1968

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1).. (1965)

<223>

<400> 1

atg tct tcc agt aat gtc gaa gtt ttt atc cca gtg tca caa gga aac	48
Met Ser Ser Ser Asn Val Glu Val Phe Ile Pro Val Ser Gln Gly Asn	
1 5 10 15	

acc aat ggc ttc ccc gcg aca gct tcc aat gac ctg aag gca ttt act	96
Thr Asn Gly Phe Pro Ala Thr Ala Ser Asn Asp Leu Lys Ala Phe Thr	
20 25 30	

gaa gga gct gtg tta agt ttt cat aac atc tgc tat cga gta aaa ctg	144
Glu Gly Ala Val Leu Ser Phe His Asn Ile Cys Tyr Arg Val Lys Leu	
35 40 45	

aag agt ggc ttt cta cct tgt cga aaa cca gtt gag aaa gaa ata tta	192
Lys Ser Gly Phe Leu Pro Cys Arg Lys Pro Val Glu Lys Glu Ile Leu	
50 55 60	

tcg aat atc aat ggg atc atg aaa cct ggt ctc aac gcc atc ctg gga	240
Ser Asn Ile Asn Gly Ile Met Lys Pro Gly Leu Asn Ala Ile Leu Gly	
65 70 75 80	

ccc aca ggt gga ggc aaa tct tcg tta gat gtc tta gct gca agg	288
Pro Thr Gly Gly Lys Ser Ser Leu Leu Asp Val Leu Ala Ala Arg	
85 90 95	

aaa gat cca agt gga tta tct gga gat gtt ctg ata aat gga gca ccg	336
Lys Asp Pro Ser Gly Leu Ser Gly Asp Val Leu Ile Asn Gly Ala Pro	

100	105	110	
cga cct gcc aat ttc aaa tgt aat tca ggt tac gtg gta caa gat gat Arg Pro Ala Asn Phe Lys Cys Asn Ser Gly Tyr Val Val Gln Asp Asp			384
115	120	125	
gtt gtg atg ggc act ctg acg gtg aga gaa aac tta cag ttc tca gca Val Val Met Gly Thr Leu Thr Val Arg Glu Asn Leu Gln Phe Ser Ala			432
130	135	140	
gct ctt cggtt gca aca act atg acg aat cat gaa aaa aac gaa cgg Ala Leu Arg Leu Ala Thr Thr Met Thr Asn His Glu Lys Asn Glu Arg			480
145	150	155	160
att aac agg gtc att caa gag tta ggt ctg gat aaa gtg gca gac tcc Ile Asn Arg Val Ile Gln Glu Leu Gly Leu Asp Lys Val Ala Asp Ser			528
165	170	175	
aag gtt gga act cag ttt atc cgt ggt gtg tct gga gga gaa aga aaa Lys Val Gly Thr Gln Phe Ile Arg Gly Val Ser Gly Gly Glu Arg Lys			576
180	185	190	
agg act agt ata gga atg gag ctt atc act gat cct tcc atc ttg ttc Arg Thr Ser Ile Gly Met Glu Leu Ile Thr Asp Pro Ser Ile Leu Phe			624
195	200	205	
ttg gat gag cct aca act ggc tta gac tca agc aca gca aat gct gtc Leu Asp Glu Pro Thr Thr Gly Leu Asp Ser Ser Thr Ala Asn Ala Val			672
210	215	220	
ctt ttg ctc ctg aaa agg atg tct aag cag gga cga aca atc atc ttc Leu Leu Leu Lys Arg Met Ser Lys Gln Gly Arg Thr Ile Ile Phe			720
225	230	235	240
tcc att cat cag cct cga tat tcc atc ttc aag ttg ttt gat agc ctc Ser Ile His Gln Pro Arg Tyr Ser Ile Phe Lys Leu Phe Asp Ser Leu			768
245	250	255	
acc tta ttg gcc tca gga aga ctt atg ttc cac ggg cct gct cag gag Thr Leu Leu Ala Ser Gly Arg Leu Met Phe His Gly Pro Ala Gln Glu			816
260	265	270	
gcc ttg gga tac ttt gaa tca gct ggt tat cac tgt gag gcc tat aat Ala Leu Gly Tyr Phe Glu Ser Ala Gly Tyr His Cys Glu Ala Tyr Asn			864
275	280	285	
aac cct gca gac ttc ttc ttg gac atc att aat gga gat tcc act gct Asn Pro Ala Asp Phe Phe Leu Asp Ile Ile Asn Gly Asp Ser Thr Ala			912
290	295	300	
gtg gca tta aac aga gaa gac ttt aaa gcc aca gag atc ata gag Val Ala Leu Asn Arg Glu Glu Asp Phe Lys Ala Thr Glu Ile Ile Glu			960

305	310	315	320	
cct tcc aag cag gat aag cca ctc ata gaa aaa tta gcg gag att tat Pro Ser Lys Gln Asp Lys Pro Leu Ile Glu Lys Leu Ala Glu Ile Tyr 325		330	335	1008
gtc aac tcc tcc ttc tac aaa gag aca aaa gct gaa tta cat caa ctt Val Asn Ser Ser Phe Tyr Lys Glu Thr Lys Ala Glu Leu His Gln Leu 340	345		350	1056
tcc ggg ggt gag aag aag aag atc aca gtc ttc aag gag atc agc Ser Gly Gly Glu Lys Lys Lys Ile Thr Val Phe Lys Glu Ile Ser 355	360	365		1104
tac acc acc tcc ttc tgt cat caa ctc aga tgg gtt tcc aag cgt tca Tyr Thr Thr Ser Phe Cys His Gln Leu Arg Trp Val Ser Lys Arg Ser 370	375	380		1152
ttc aaa aac ttg ctg ggt aat ccc cag gcc tct ata gct cag atc att Phe Lys Asn Leu Leu Gly Asn Pro Gln Ala Ser Ile Ala Gln Ile Ile 385	390	395	400	1200
gtc aca gtc gta ctg gga ctg gtt ata ggt gcc att tac ttt ggg cta Val Thr Val Val Leu Gly Leu Val Ile Gly Ala Ile Tyr Phe Gly Leu 405	410	415		1248
aaa aat gat tct act gga atc cag aac aga gct ggg gtt ctc ttc ttc Lys Asn Asp Ser Thr Gly Ile Gln Asn Arg Ala Gly Val Leu Phe Phe 420	425	430		1296
ctg acg acc aac cag tgt ttc agc agt gtt tca gcc gtg gaa ctc ttt Leu Thr Thr Asn Gln Cys Phe Ser Ser Val Ser Ala Val Glu Leu Phe 435	440	445		1344
gtg gta gag aag aag ctc ttc ata cat gaa tac atc agc gga tac tac Val Val Glu Lys Lys Leu Phe Ile His Glu Tyr Ile Ser Gly Tyr Tyr 450	455	460		1392
aga gtg tca tct tat ttc ctt gga aaa ctg tta tct gat tta tta ccc Arg Val Ser Ser Tyr Phe Leu Gly Lys Leu Leu Ser Asp Leu Leu Pro 465	470	475	480	1440
atg agg atg tta cca agt att ata ttt acc tgt ata gtg tac ttc atg Met Arg Met Leu Pro Ser Ile Ile Phe Thr Cys Ile Val Tyr Phe Met 485	490	495		1488
tta gga ttg aag cca aag gca gat gcc ttc ttc gtt atg atg ttt acc Leu Gly Leu Lys Pro Lys Ala Asp Ala Phe Phe Val Met Met Phe Thr 500	505	510		1536
ctt atg atg gtg gct tat tca gcc agt tcc atg gca ctg gcc ata gca Leu Met Met Val Ala Tyr Ser Ala Ser Met Ala Leu Ala Ile Ala				1584

515	520	525	
gca ggt cag agt gtg gtt tct gta gca aca ctt ctc atg acc atc tgt Ala Gly Gln Ser Val Val Ser Val Ala Thr Leu Leu Met Thr Ile Cys			1632
530	535	540	
ttt gtg ttt atg atg att ttt tca ggt ctg ttg gtc aat ctc aca acc Phe Val Phe Met Met Ile Phe Ser Gly Leu Leu Val Asn Leu Thr Thr			1680
545	550	555	560
att gca tct tgg ctg tca tgg ctt cag tac ttc agc att cca cga tat Ile Ala Ser Trp Leu Ser Trp Leu Gln Tyr Phe Ser Ile Pro Arg Tyr			1728
565	570	575	
gga ttt acg gct ttg cag cat aat gaa ttt ttg gga caa aac ttc tgc Gly Phe Thr Ala Leu Gln His Asn Glu Phe Leu Gly Gln Asn Phe Cys			1776
580	585	590	
cca gga ctc aat gca aca gga aac aat cct tgt aac tat gca aca tgt Pro Gly Leu Asn Ala Thr Gly Asn Asn Pro Cys Asn Tyr Ala Thr Cys			1824
595	600	605	
act ggc gaa gaa tat ttg gta aag cag ggc atc gat ctc tca ccc tgg Thr Gly Glu Glu Tyr Leu Val Lys Gln Gly Ile Asp Leu Ser Pro Trp			1872
610	615	620	
ggc ttg tgg aag aat cac gtg gcc ttg gct tgt atg att gtt att ttc Gly Leu Trp Lys Asn His Val Ala Leu Ala Cys Met Ile Val Ile Phe			1920
625	630	635	640
ctc aca att gcc tac ctg aaa ttg tta ttt ctt aaa aaa tat tct taa Leu Thr Ile Ala Tyr Leu Lys Leu Leu Phe Leu Lys Lys Tyr Ser			1968
645	650	655	

<210> 2
 <211> 655
 <212> PRT
 <213> Homo sapiens

<400> 2

Met Ser Ser Ser Asn Val Glu Val Phe Ile Pro Val Ser Gln Gly Asn
1 5 10 15

Thr Asn Gly Phe Pro Ala Thr Ala Ser Asn Asp Leu Lys Ala Phe Thr
20 25 30

Glu Gly Ala Val Leu Ser Phe His Asn Ile Cys Tyr Arg Val Lys Leu
35 40 45

Lys Ser Gly Phe Leu Pro Cys Arg Lys Pro Val Glu Lys Glu Ile Leu
50 55 60

Ser Asn Ile Asn Gly Ile Met Lys Pro Gly Leu Asn Ala Ile Leu Gly
65 70 75 80

Pro Thr Gly Gly Lys Ser Ser Leu Leu Asp Val Leu Ala Ala Arg
85 90 95

Lys Asp Pro Ser Gly Leu Ser Gly Asp Val Leu Ile Asn Gly Ala Pro
100 105 110

Arg Pro Ala Asn Phe Lys Cys Asn Ser Gly Tyr Val Val Gln Asp Asp
115 120 125

Val Val Met Gly Thr Leu Thr Val Arg Glu Asn Leu Gln Phe Ser Ala
130 135 140

Ala Leu Arg Leu Ala Thr Thr Met Thr Asn His Glu Lys Asn Glu Arg
145 150 155 160

Ile Asn Arg Val Ile Gln Glu Leu Gly Leu Asp Lys Val Ala Asp Ser
165 170 175

Lys Val Gly Thr Gln Phe Ile Arg Gly Val Ser Gly Gly Glu Arg Lys
180 185 190

Arg Thr Ser Ile Gly Met Glu Leu Ile Thr Asp Pro Ser Ile Leu Phe
195 200 205

Leu Asp Glu Pro Thr Thr Gly Leu Asp Ser Ser Thr Ala Asn Ala Val
210 215 220

Leu Leu Leu Lys Arg Met Ser Lys Gln Gly Arg Thr Ile Ile Phe
225 230 235 240

Ser Ile His Gln Pro Arg Tyr Ser Ile Phe Lys Leu Phe Asp Ser Leu
245 250 255

Thr Leu Leu Ala Ser Gly Arg Leu Met Phe His Gly Pro Ala Gln Glu
260 265 270

Ala Leu Gly Tyr Phe Glu Ser Ala Gly Tyr His Cys Glu Ala Tyr Asn
275 280 285

Asn Pro Ala Asp Phe Phe Leu Asp Ile Ile Asn Gly Asp Ser Thr Ala
290 295 300

Val Ala Leu Asn Arg Glu Glu Asp Phe Lys Ala Thr Glu Ile Ile Glu
305 310 315 320

Pro Ser Lys Gln Asp Lys Pro Leu Ile Glu Lys Leu Ala Glu Ile Tyr
325 330 335

Val Asn Ser Ser Phe Tyr Lys Glu Thr Lys Ala Glu Leu His Gln Leu
340 345 350

Ser Gly Gly Glu Lys Lys Lys Lys Ile Thr Val Phe Lys Glu Ile Ser
355 360 365

Tyr Thr Thr Ser Phe Cys His Gln Leu Arg Trp Val Ser Lys Arg Ser
370 375 380

Phe Lys Asn Leu Leu Gly Asn Pro Gln Ala Ser Ile Ala Gln Ile Ile
385 390 395 400

Val Thr Val Val Leu Gly Leu Val Ile Gly Ala Ile Tyr Phe Gly Leu
405 410 415

Lys Asn Asp Ser Thr Gly Ile Gln Asn Arg Ala Gly Val Leu Phe Phe
420 425 430

Leu Thr Thr Asn Gln Cys Phe Ser Ser Val Ser Ala Val Glu Leu Phe
435 440 445

Val Val Glu Lys Lys Leu Phe Ile His Glu Tyr Ile Ser Gly Tyr Tyr
450 455 460

Arg Val Ser Ser Tyr Phe Leu Gly Lys Leu Leu Ser Asp Leu Leu Pro
465 470 475 480

Met Arg Met Leu Pro Ser Ile Ile Phe Thr Cys Ile Val Tyr Phe Met
485 490 495

Leu Gly Leu Lys Pro Lys Ala Asp Ala Phe Phe Val Met Met Phe Thr
500 505 510

Leu Met Met Val Ala Tyr Ser Ala Ser Ser Met Ala Leu Ala Ile Ala
515 520 525

Ala Gly Gln Ser Val Val Ser Val Ala Thr Leu Leu Met Thr Ile Cys
530 535 540

Phe Val Phe Met Met Ile Phe Ser Gly Leu Leu Val Asn Leu Thr Thr
545 550 555 560

Ile Ala Ser Trp Leu Ser Trp Leu Gln Tyr Phe Ser Ile Pro Arg Tyr
565 570 575

Gly Phe Thr Ala Leu Gln His Asn Glu Phe Leu Gly Gln Asn Phe Cys
580 585 590

Pro Gly Leu Asn Ala Thr Gly Asn Asn Pro Cys Asn Tyr Ala Thr Cys
595 600 605

Thr Gly Glu Glu Tyr Leu Val Lys Gln Gly Ile Asp Leu Ser Pro Trp
610 615 620

Gly Leu Trp Lys Asn His Val Ala Leu Ala Cys Met Ile Val Ile Phe
625 630 635 640

Leu Thr Ile Ala Tyr Leu Lys Leu Leu Phe Leu Lys Lys Tyr Ser
645 650 655

<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 1 forward primer

<400> 3
gtgcccactc aaaaggtt 18

<210> 4
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 1 reverse primer

<400> 4
tccagtc当地 gctgtactct g 21

<210> 5
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 2 forward primer

<400> 5
atgtattgtc accttagtgtt tg 22

<210> 6
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 2 reverse primer

<400> 6
aaagtgtgaa gccttgagca ga 22

<210> 7
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Exon 3 forward primer

<400> 7
aacggagatg tttcacaaga

20

<210> 8
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 3 reverse primer

<400> 8
tacaataaag ccccaaaaca

20

<210> 9
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 4 forward primer

<400> 9
gaggaaaaag aatgggagaa

20

<210> 10
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 4 reverse primer

<400> 10
gtctgcaaag cctgctataa

20

<210> 11
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 5 forward primer

<400> 11
ttccttcacc tttctttcc

20

<210> 12
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 5 reverse primer

<400> 12
cttccataaa actggtcctc 20

<210> 13
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 6 forward primer

<400> 13
gaggtgcattt gtatcaggctc 20

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 6 reverse primer

<400> 14
gatcaggcca gtaggtcaac 20

<210> 15
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 7 forward primer

<400> 15
cttgtaaata cttgcagatt acctg 25

<210> 16
<211> 25

<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 7 reverse primer

<400> 16
tgttcaagtg acagaataaa tggct

25

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 8 forward primer

<400> 17
aaagggtaaa attacgtggg

20

<210> 18
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 8 reverse primer

<400> 18
gcaaacaaac tgacgtttc

20

<210> 19
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 9 forward primer

<400> 19
aatgaagggtg ttagggaagc

20

<210> 20
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Exon 9 reverse primer

<400> 20

ctggctgaca ctttttcac

20

<210> 21

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Exon 10 forward primer

<400> 21

tctcccaaaa gcacagataaa ct

22

<210> 22

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Exon 10 reverse primer

<400> 22

catttaaaaa taattgggcc aggttg

25

<210> 23

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Exon 11 forward primer

<400> 23

ctaattacct tccaaagggc

20

<210> 24

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Exon 11 reverse primer

<400> 24

aaaccaggct gcttttact

20

<210> 25
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 12 forward primer

<400> 25
gctgggtatt tttcaaggat 20

<210> 26
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 12 reverse primer

<400> 26
agagagtgc aaatggacag 20

<210> 27
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 13 forward primer

<400> 27
tgcctgttagc tcttcatctc 20

<210> 28
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 13 reverse primer

<400> 28
acgagaggga accaaaatag 20

<210> 29
<211> 25

<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 14 forward primer

<400> 29
ctttttggca gctttaaatg atagc

25

<210> 30
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 14 reverse primer

<400> 30
aatctttctc ctttactagg aggtt

25

<210> 31
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 15 forward primer

<400> 31
tttacttctt ttgtatttggaa agccaa

25

<210> 32
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 15 reverse primer

<400> 32
tagaggataa atcgatttgat aggga

25

<210> 33
<211> 25
<212> DNA
<213> Artificial Sequence

<220>

<223> Exon 16 forward primer

<400> 33
atctgaaggg gtaattatta aaggc

25

<210> 34
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 16 reverse primer

<400> 34
tgttccagaa atggtgcaag aattc

25

<210> 35
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 1 sense primer

<400> 35
gtgcccactc aaaaggtt

18

<210> 36
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 1 antisense primer

<400> 36
caagagtttt taccaaccca

20

<210> 37
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 2 sense primer

<400> 37
atgtattgtc accttagtgtt tg

22

<210> 38
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 2 antisense primer

<400> 38
gtggcccaat tatttact 19

<210> 39
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 3 sense primer

<400> 39
taagagtgg ttttgtgcttg 20

<210> 40
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 3 antisense primer

<400> 40
aacatggtca actgctacat 20

<210> 41
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 4 sense primer

<400> 41
atgttttggg gctttattt 19

<210> 42
<211> 19

<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 4 antisense primer

<400> 42
tattccagat tctccctgc

19

<210> 43
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 5 sense primer

<400> 43
caggctttgc agacatcta

19

<210> 44
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 5 antisense primer

<400> 44
attgttatgg aaagcaacca

20

<210> 45
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 6 sense primer

<400> 45
gaggttgcttt gtatcaggct

20

<210> 46
<211> 19
<212> DNA
<213> Artificial Sequence

<220>

<223> Exon 6 antisense primer

<400> 46
caccctcatc acagacatc

19

<210> 47
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 7 sense primer

<400> 47
ctgtcctaga atctgcattt

20

<210> 48
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 7 antisense primer

<400> 48
agctggtgct acaaaaat

18

<210> 49
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 8 sense primer

<400> 49
aaagggtaaa attacgtggg

20

<210> 50
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 8 antisense primer

<400> 50
tctggttgtt gcttcctact

20

<210> 51
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 9 sense primer

<400> 51
gttagggaag catccaaga 19

<210> 52
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 9 antisense primer

<400> 52
aggaaagctt tccaaaagta 20

<210> 53
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 10 sense primer

<400> 53
tctccccaaa gcacagataa ct 22

<210> 54
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 10 antisense primer

<400> 54
tggtggtgga tgtctgtagt 20

<210> 55
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 11 sense primer

<400> 55
ctaattacct tccaaaggc 20

<210> 56
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 11 antisense primer

<400> 56
gctcaggatt ttcttcccta 20

<210> 57
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 12 sense primer

<400> 57
ctggactgag tggcaggag 20

<210> 58
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 12 antisense primer

<400> 58
agagagtgc aatggacag 20

<210> 59
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Exon 13 sense primer

<400> 59

tgcctgttagc tcttcatctc

20

<210> 60

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Exon 13 antisense primer

<400> 60

ataagggcaa agagggaaagt

20

<210> 61

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Exon 14 sense primer

<400> 61

tttggtttttc ctttaaaaacc g

21

<210> 62

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Exon 14 antisense primer

<400> 62

aatctttctc ctttactagg aggtta

25

<210> 63

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Exon 15 sense primer

<400> 63

tttacttctt ttgtattgga agccaa

25

<210> 64
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 15 antisense primer

<400> 64
aaaaggccca aaacaataag

20

<210> 65
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 16-1 sense primer

<400> 65
atctgaaggg gtaattatta aaggc

25

<210> 66
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 16-1 antisense primer

<400> 66
caggagtttc cagaattcaa

20

<210> 67
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Exon 16-2 sense primer

<400> 67
tgttgtttgc tgttcccttg

20

<210> 68
<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Exon 16-2 antisense primer

<400> 68

tgttccagaa atggtgcaag aattc

25